

**AN INTERESTING INSECT ASSEMBLAGE REARED FROM
THE BRACKET FUNGUS *INOTUS HISPIDUS* (BULL. EX FR.)
KARST FROM HYDE PARK, MIDDLESEX.**

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ABSTRACT

The insect inhabitants of a large bracket fungus *Inotus hispidus* were examined. Sixty-nine insects of eight species and four orders were extracted, including *Orchesia micans* (Panz.) (Coleoptera: Melandryidae), its parasitoid *Meteorus obfuscatus* (Nees) (Hymenoptera: Braconidae), *Helorus nigripes* Förster (Hymenoptera: Heloridae), *Gaurax fascipes* Becker (Diptera: Chloropidae) and *Lasiambia brevibuca* (Duda) (Diptera: Chloropidae). New ecological and distributional data for the chloropids are presented.

A large bracket fungus *Inotus hispidus* (Bull.ex Fr.) Karst (Hymenochaetales) was found in March 2000 in Hyde Park, Middlesex (TQ2780: VC21), lying on the footpath having recently fallen from a London Plane tree *Platanus × hispanica* Miller ex Münchh. (Platanaceae), where it had been growing about 3 metres above ground level. Though generally regarded as being associated with Ash (*Fraxinus excelsior* L., Oleaceae) in the UK, this species is known to attack *Platanus* spp. (Ryvarden & Gilbertson, 1993), and commonly grows on such trees in some German cities (G. Kleist, pers. comm.).

The fungus from Hyde Park was decayed and waterlogged, and contained several pink tenebrionoid larvae. From their size and distinctive pink colour (which is referred to by Donisthorpe, 1939) it was assumed they were larvae of *Orchesia micans* (Panzer) (Melandryidae). Part of the fungus (approximately 18 × 18 × 10cm) was collected and placed in a plastic tray with a glass lid, which was examined daily for emerging insects, which were placed in alcohol. As the fungus was kept indoors, the exact dates of emergence of the insects have little relevance, and were not recorded.

In June the insects that had emerged were examined, and the fungus was broken up under a hand lens to search for further insects and remains of immature stages. The following species were recorded from the fungus:

| Order | Family | Species | No. |
|-------------|----------------|-----------------------------------|-----|
| Lepidoptera | Tineidae | <i>Nemapogon granella</i> (L.) | 8 |
| Coleoptera | Melandryidae | <i>Orchesia micans</i> (Panzer) | 32 |
| | Ciidae | <i>Cis bilammelatus</i> Wood | 1 |
| | Cryptophagidae | <i>Cryptophagus scanicus</i> (L.) | 3 |
| Hymenoptera | Braconidae | <i>Meteorus obfuscatus</i> (Nees) | 15 |
| | Heloridae | <i>Helorus nigripes</i> Förster | 2 |
| Diptera | Chloropidae | <i>Gaurax fascipes</i> Becker | 5 |
| | | <i>Lasiambia brevibuca</i> (Duda) | 3 |

Orchesia micans is listed as 'Notable B' by Hyman (1992). In the author's experience the adults of this species are the least frequently collected of the three British *Orchesia* species, but are probably under-recorded because of their skulking habits, their association with arboreal fungi (which in summer are still attached to the host tree) and their ability to jump to avoid capture. The larvae are encountered much more easily than the adults. Nikitsky (1996) associates *micans* with *Inonotus obliquus*, *I. radiatus*, *I. hispidus*, *I. dryophilus*, *I. rheades*, *Phellinus* spp. (Hymenochaetales) and *Fomes fomentarius* (Poriales) in the Moscow District, Russia, and suggests a preference for the non-British *I. rheades*. Donisthorpe (1939) lists the following hosts utilised at Windsor Forest, Berkshire: *Fistulina hepatica* (Fistulinales), *Merpilus giganteus* (Poriales) and *Inonotus dryadeus* (Hymenochaetales). It will apparently exploit a wide range of bracket fungi growing on deciduous trees.

The braconid *Meteorus obfuscatus* (Nees), a parasitoid of *Orchesia* spp., was reared in some numbers. *Orchesia micans* and *M. obfuscatus* have been reared together from *I. hispidus* in Norfolk (Evans, 1988b), and the association between them is well established (Huddleston, 1980). This braconid has previously been reported from this grid square (TQ28), in Regent's Park, London (Huddleston, *l.c.*). It is noteworthy that the ratio of parasitised to non-parasitised *Orchesia* was approximately 1:2. Pupal cells of *Orchesia* were readily found, containing the head capsule of the beetle larva, and often a coarse yellow silk cocoon of *Meteorus*.

The presence of a second hymenopteran, the proctotrupoid *Helorus nigripes* Förster, was initially surprising as this species is usually associated with green lacewings (*Chrysopa* spp.: Chrysopidae) (Townes, 1977), not typically inhabitants of fungi. However, two spherical white silk cocoons were found among the gills of the fungus, resembling baskets with circular hinged lids, and with a few brown hairs attached to the outside. One of these was located only 2 cm from a freshly emerged *Helorus*, and was still damp with mucus from the emergence. As proctotrupoids do not form cocoons, it was suspected that these were the cocoons of lacewings, which was confirmed using Withycombe (1923). Such cocoons are often found under the bark of plane trees in London, and probably the lacewing larvae, which are active predators on foliage, pupate in any available crevice, in this case the gills of the fungus. It was unfortunate that both of the lacewing larvae were parasitised, as an adult chrysopid would have permitted identification to species, thus adding information on the host preferences of *H. nigripes*. Withycombe (1923) reared *H. nigripes* from *Chrysopa septempunctata* Wesmael, and it has been reared from the non-British *C. nigricostata* Brauer on the continent (Fergusson & Smith, 1974).

Helorus nigripes is a very infrequently recorded species; Fergusson & Smith (*l.c.*) give an account of its British distribution (as *H. rugosus* Thomson), admitting only four British records, three from Middlesex (VC21), Bedford Park (TQ27), 'London N12' (i.e. Finchley, TQ28) and Islington (TQ38), and one from Surrey; Oxshott (TQ16: VC17). Cooter & Fergusson (1993) add a fifth, Tupsley, Hereford (SO54: VC36), but no subsequent published records were found. D. Quicke (pers. comm.) states that Malaise Trapping has shown it to be 'more abundant than the literature suggests'.

The moth *Nemapogon granella* (L.) was found to have developed in the outside layer of the fungus among the gills, indicated by frass and pupal exuviae. This species, which has a very wide global distribution, has previously been recorded from bracket fungi; G. Robinson (NHM) has a toy yak from Nepal made from poriale fungi infested with this moth. The species also occasionally attacks stored products (e.g. Somerfield *et al*, 1980) but, despite its common name 'corn moth', it is not now a major pest of grain. According to M. Honey (pers. comm.) this is only the second

Middlesex record for this species, but this is probably due to under-recording, given its wide distribution and occasional pest status. Evans (1988a) refers to a species of *Apanteles* (Hymenoptera: Braconidae) attacking *Nemapogon* in fungi, but none emerged from this fungus.

Two species of chloropid fly were reared from the fungus. *Gaurax fascipes* Becker has previously been reared from birds' nests (Collin, 1939) and from laburnum bark (BMNH collection, Coll. C. Pugh, vi-1934). Records from the bracket fungus *Piptoporus betulinus* (Bull. Ex Fr.) Karst (Poriales) were considered to represent immature *Gaurax dubius* (Macquart) by Smith (1965). The specimens considered here were also slightly immature but had a dark spot on the hind tibia, a character of *G. fascipes* (J. Ismay, pers. comm.). This would therefore appear to be the first record of *G. fascipes* from fungi. Specimens in the BMNH collection labelled 'Primrose Hill, K.A. Spencer 1957' indicate a previous record from TQ28.

The second chloropid species, *Lasiambia brevibuca* (Duda) is listed as 'Notable B' by Ball (1992), who associates it with 'old woodland and parkland' stating that 'larvae develop in rotting wood and sap runs'. It has been reared from sappy bark of Horse Chestnut *Aesculus hippocastanum* L. (Godfrey, 1998). Ismay (2000) states 'associated with sap flows, damaged trees or rot-holes, but the exact nature of the association is unclear'. Apparently, an association with tree fungi has not previously been noted. Both species of fly certainly emerged from the fungus, as they were still teneral when collected into alcohol in May. Ismay (*l.c.*) lists eleven vice-counties where *brevibuca* has been recorded, mainly in the south of England, extending north to Yorkshire, but not including Middlesex. This is apparently the first record for this sparsely wooded vice-county.

The remaining insects, *Cryptophagus scanicus* (L.) and a single female *Cis bilammelatus* Wood, were found alive as adults inside the dried fungus. It is probable they did not develop in the fungus as only small numbers were present, and there was no evidence of immature stages, but they were almost certainly feeding on the fungus. *Cis bilammelatus* is a naturalised species from Australia, but is now one of the commonest members of the Ciidae in Britain; however, this is apparently the first record from *Inonotus hispidus* (G. Orledge, pers. comm.). It is generally associated with the poriale genera *Piptoporus* and *Coriolus* (Cooter, 1991). *Cryptophagus scanicus* is a common generalist scavenger and fungivore in a wide variety of substrates.

The absence of Staphylinidae (Coleoptera) and larvae of nematoceran Diptera (on which many staphylinids presumably feed) from the fungus is perhaps worthy of mention.

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REFERENCES

- Ball, S. 1992. *Recorder Version 3.2, a database for site based species occurrence records*, JNCC, Peterborough.
- Collin, J.E. 1939. On various new or little known Diptera, including several species bred from the nests of birds and mammals. *Entomologist's Monthly Magazine* **75**: 134–154.
- Cooter, J. 1991. *A Coleopterist's Handbook*. Grosvenor Press, Portsmouth. 294 pp.
- Cooter, J. & Fergusson, N.D.M. 1993. *Helorus nigripes* Forster (Hym., Heloridae), a fifth British record. *Entomologist's Monthly Magazine* **129**: 29.
- Donisthorpe, H.St.J.K. 1939. *A preliminary list of the Coleoptera of Windsor Forest*, London, Nathaniel Lloyd: 126 pp.
- Evans, R. 1988a. Fruit Flies from Fungi. *Norfolk Natterjack* **28**: 3
- Evans, R. 1988b. A common bracket fungus and its inhabitants. *Norfolk Natterjack* **28**: 4
- Fergusson, N. & Smith, K.G.V. 1974. *Helorus rugosus* Thomson (Hym., Heloridae) in Britain. *Entomologist's Monthly Magazine* **109**: 222.
- Godfrey, A. 1998. The Diptera of Moccas Park National Nature Reserve. *Dipterists Digest* (2nd Series) **5**: 44–48.
- Huddleston, T. 1980. A revision of the western Palaearctic species of the genus *Meteorus* (Hymenoptera: Braconidae). *Bulletin of the British Museum (Natural History) (Entomology)* **41**: 1–58.
- Hyman, P.S. (revised Parsons, M.S.) 1992. *A review of the scarce and threatened Coleoptera of Great Britain*. Part 1. UK Nature Conservation 3. Peterborough: JNCC.
- Ismay, J.W. 2000. The British species of *Lasiambia* Sabrosky (Diptera, Chloropidae). *Dipterists Digest* **7**: 59–70.
- Nikitsky, N.B., Osipov, I.N., Chemeris, M.V., Semenov, V.B. & Gusakov, A.A. 1996. *The beetles of Prioksko-Terrasny Biosphere Reserve – Xylobiontes, Mycetobiontes and Scarabaeidae (with the review of the Moscow Region fauna of these groups)*. Archives of the Zoological Museum of Moscow. **36**: 196 pp.
- Ryvarden, L. & Gilbertson, R.L. 1993. *European Polypores, part 1: Abortiporus – Lindtneria*. Gronlands Grafiske, Oslo, 387 pp.
- Smith, K.G.V. 1965. The immature stages of *Gaurax* (= *Botanobia*) *dubius* (Marquart) (Dipt: Chloropidae), with notes on the specific status of *G. fascipes* Becker. *Entomologist's Monthly Magazine* **100**: 237–239.
- Somerfield, K.G., Manson, D.C.M. & Dale, P.S. 1980. Insects and mites associated with dried milk product storage areas in New Zealand. *New Zealand Journal of Experimental Agriculture* **8**: 83–85.
- Townes, H. 1977. A revision of the Heloridae (Hymenoptera). *Contributions of the American Entomological Institute* **15**: 1–12.
- Withycombe, C.L. 1923 Notes on the biology of some British Neuroptera (Planipennia). *Transactions of the Entomological Society of London*, **55**: 501–94.

***Dolerus megapterus* Cameron (Hymenoptera: Tenthredinidae) in Southern Britain.**

A male sawfly collected in carr woodland adjacent to the Kennet & Avon canal at Burghfield Bridge, Berkshire (SU6770) on 17.vi.03 was identified as *Dolerus megapterus*, which according to Benson (1958) is associated with Cyperaceae. With several records from northern Scotland, and also found in the Manchester area of England. – JONTY DENTON, Kingsmead, Wield Road, Medstead, Hampshire, GU34 5NJ, UK & GRAHAM A. COLLINS, 15 Hurst Way, South Croydon, Surrey, CR2 7AP, UK.

REFERENCE

- Benson, R.B. 1958. Hymenoptera 2. Symphyta. Section (b). *Handbooks for the Identification of British Insects*, **6.2(b)**, 51–137.